

# ANALYTICA CHIMICA ACTA

International journal devoted to all branches of analytical chemistry

(Abstracted, Indexed in: Anal. Abstr.; Biol. Abstr.; Chem. Abstr.; Curr. Contents/Phys. Chem. Earth Sci.; Life Sci.; Index Med.; Mass Spectrom. Bull.; Sci. Citation Index; Excerpta Med.)

VOL. 204

CONTENTS

JANUARY 15, 1988

Guest Editorial by D.C. Johnson (Ames, IA, U.S.A.)	1
<b>General Analytical Chemistry</b>	
Flow-injection analysis as a diagnostic technique for development and testing of chemical sensors T.D. Yerian, G.D. Christian and J. Ruzicka (Seattle, WA, U.S.A.)	7
Optimization criteria for a single bead-string reactor in flow injection analysis based on consecutive kinetic reactions J.J.F. van Veen (Delft, The Netherlands), M.A.J. van Opstal, J.M. Reijn, W.P. van Bennekom and A. Bult (Utrecht, The Netherlands)	29
Flow-injection determination of starch and total carbohydrate with an immobilized glucoamylase reactor and pulsed amperometric detection L.A. Larew, D.A. Mead, Jr. and D.C. Johnson (Ames, IA, U.S.A.)	43
Flow-injection spectrophotometric determination of silicate, phosphate and arsenate with on-line column separation Y. Narusawa (Tokyo, Japan)	53
Certification of a second-generation biological reference material (freeze-dried human serum) for trace element determinations J. Versieck, L. Vanballenberghe, A. de Kesel, J. Hoste, B. Wallaeys, J. Vandenhoute, N. Baecq, H. Steyaert (Ghent, Belgium), A.R. Byrne (Ljubljana, Yugoslavia) and F.W. Sunderman, Jr. (Farmington, CT, U.S.A.)	63
Oxydation vanadique de l'hydroxy-8-quinoléine, la methyl-2-hydroxy-8-quinoléine et l'amino-8-quinoléine. Applications analytiques A. Assamoi, M. Hamon et J. Likforman (Chatenay-Malabry, France)	77
<b>Separations</b>	
Rapid determination of magnesium and calcium hardness in water by ion chromatography D.L. Smith and J.S. Fritz (Ames, IA, U.S.A.)	87
Electrosorptive detection based on double-layer capacitance for selective anion monitoring in ion chromatography. Part 1. Mercury electrodes T. Ramstad and M.J. Weaver (West Lafayette, IN, U.S.A.)	95
Synthesis of chromogenic crown ethers and liquid-liquid extraction of alkaline earth metal ions Y. Katayama, R. Fukuda, T. Iwasaki, K. Nita and M. Takagi (Fukuoka, Japan)	113
On-line monitoring during fermentation of whey based on ultrafiltration and liquid chromatography X. Monseur and J.C. Motte (Tervuren, Belgium)	127
Rapid preliminary separation of petroleum hydrocarbons by solid-phase extraction cartridges N. Theobald (Hamburg, F.R.G.)	135
Separation of amino acid enantiomers by adding a chiral complex to the eluent P. Masia, I. Nicoletti, M. Sinibaldi, D. Attanasio (Monterotondo Stazione, Italy) and A. Messina (Rome, Italy)	145

(Continued overleaf)

(Contents continued)

*Electrometric Methods*

Polarographic studies on tributyltin oxide in dichloromethane and tetrahydrofuran with application to antifouling paint	151
A.M. Bond and N.M. McLachlan (Waurn Ponds, Vic., Australia)	151
Direct determination of bismuth(III) in sea water by square-wave anodic stripping voltammetry at a glassy-carbon rotating-disk electrode	161
S. Komorsky-Lovrić (Jülich, F.R.G.)	161
Determination of chlorite at very low levels by using differential pulse polarography	169
S. Nakareseison, S. Tachiyashiki, J. Benga, G.E. Pacey and G. Gordon (Oxford, OH, U.S.A.)	169
Analysis of rain water by differential-pulse stripping voltammetry in nitric acid medium	179
Z. Komy, E. Roekens and R. van Grieken (Wilrijk, Belgium)	179
Analysis of metal alloys by second-harmonic phase-selective a.c. voltammetry	189
C. Locatelli, F. Fagioli, T. Garai, C. Bighi and R. Vechietti (Ferrara, Italy)	189
Voltammetric determination of <i>N</i> -alkylated anilines by adsorption/extraction at a carbon-paste electrode	201
N.E. Zouli and C.E. Efstatithiou (Athens, Greece)	201
Air-gap sulfide sensor with super-Nernstian response in the low concentration range	213
J. Fligier, P. Czichon, Z. Gregorowicz (Gliwice, Poland) and M. Gratzl (Budapest, Hungary)	213
A sodium ion-selective electrode based on methyl <i>p</i> -t-butylcalix[4]aryl acetate as the ionophore	223
D. Diamond, G. Svehla (Belfast, Northern Ireland), E.M. Seward and M.A. McKervey (Cork, Ireland)	223

*Spectrometric Methods*

The characterization of trichothecenes as their heptafluorobutyrate esters by negative-ion chemical ionization tandem mass spectrometry	233
R. Kostiainen and A. Rizzo (Helsinki, Finland)	233
Paper-substrate room-temperature phosphorescence of phenothiazine derivatives enhanced by thallium(II) nitrate and surface-active agents	247
M.C. Garcia Alvarez-Coque, G. Ramis Ramos, A.M. O'Reilly and J.D. Winefordner (Gainesville, FL, U.S.A.)	247
Determination of sucrose in sugar-cane juice and molasses by flow-injection spectrophotometry	259
E.A.G. Zagatto, I.L. Mattos and A.O. Jacintho (São Paulo, Brazil)	259
Automated flow-injection determination of sulfonamides by the Bratton-Marshall reaction for clinical analysis, assays and dissolution studies of formulation	271
M.A. Koupparis and P.I. Anagnostopoulou (Athens, Greece)	271
Continuous-flow molecular emission cavity analysis for organic sulphur compounds by alkaline hydrolysis	285
N. Grekas and A.C. Calokerinos (Athens, Greece)	285

*Computer Methods and Applications*

Optimizing data-acquisition schedules in physicochemical experiments. Part 1. Principle of the method and application to the first-order decay of an absorbing species	295
L. Meites and A. Hussam (Fairfax, VA, U.S.A.)	295
Evaluation of colour changes of indicators: the SUPERCOLOR program	311
M. Rosés (Barcelona, Spain)	311

**Short Communications**

A comparison of pulsed amperometric detection and conductivity detection for carbohydrates	323
L.E. Welch, D.A. Mead, Jr. and D.C. Johnson (Ames, IA, U.S.A.)	
Photo-cured polymers in ion-selective electrode membranes. Part 3. A potassium electrode for flow injection analysis	329
T.J. Cardwell, R.W. Cattrall, P.J. Iles (Melbourne, Vic., Australia) and I.C. Hamilton (Newcastle, N.S.W., Australia)	
The determination of platinum and palladium in rocks and soils by electrothermal atomic absorption spectrometry of extracts of their iodo complexes	333
R.R. Brooks and B.-S. Lee (Palmerston North, New Zealand)	
Speciation of silica in high-purity water	339
T. Miwa, Y. Noguchi and A. Mizuiki (Nagoya, Japan)	
Flow-injection determination of secondary amines in non-aqueous solution with fluorescence detection	343
I.R.C. Whiteside, P.J. Worsfold (Hull, Gt. Britain) and E.H. McKerrell (Chester, Gt. Britain)	
A simple spectrophotometric determination of hydrogen peroxide at low concentrations in aqueous solution	349
A.N. Baga, G.R.A. Johnson, N.B. Nazhat and R.A. Saadalla-Nazhat (Newcastle upon Tyne, Gt. Britain)	
An improved spectrophotometric determination of manganese(II) with 1-(2-quinolylazo)-2,4,5-trihydroxybenzene with applications to medicinal plants and chemical reagents	355
A.A.R. Laila (Birzeit, Israel)	
Spectrophotometric determination of rhenium as perrhenate after extraction of its Brilliant Green ion-pair with microcrystalline benzophenone	359
D.T. Burns and N. Tungkananruk (Belfast, Northern Ireland)	
Spectrophotometric determination of niobium(V) after extraction in the presence of thiocyanate with the ethylene-bis-(triphenylphosphonium) cation	365
D.T. Burns and D. Chimpalee (Belfast, Northern Ireland)	
<b>Book Reviews</b>	371